

RF Code Reader Utilities and SDK



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Bluetooth QD ID: B012541

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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The RF Code Reader Utilities and SDK CD-ROM contains several items to assist partners and customers with using RF Code readers:

- **Reader Configuration Utility** – a Windows-based utility for upgrading firmware and configuring M200 Family Readers
- **RF Code SDK** – reader API specification and code samples for 3rd-party RFID application development
- **MobileTrak-Lite** – demonstration asset tracking and inventory application for Windows Mobile, Windows XP and BlackBerry
- **End-user documentation** for RF Code M200 Family Readers
- **Tag Collection Utility** - a Windows-based application that utilizes the Tag Collection Mode of the M220 Mobile Reader to inventory groups of assets

Reader Configuration Utility

The reader configuration utility is a Windows based software program that interfaces with an RF Code reader and is used to update firmware on a reader, or assign an IP address to a standard reader.

The reader configuration utility is typically used to upgrade the firmware embedded in one of the RF Code readers (mobile or standard reader). Updated firmware with new features and capabilities will periodically become available for the RF Code readers. All firmware upgrades will be provided as one firmware update package.

The firmware image file can be uploaded to a reader connected to a network or to a reader connected to your PC by a RS-232 serial cable, PCMCIA card, or USB cable.

Requirements

System Requirements:

- 83 MB available hard drive space
- Windows 2000, NT, or XP operating system

Installation

Insert the CD into your CD-ROM drive and click on “Install Reader Configuration Utility” to begin. If the CD autorun program does not launch the CD main menu, you can use a Windows explorer window to browse to your CD drive and double-click the RF Code Utility CD Menu file to start the autorun program or install the Reader Configuration Utility directly by double clicking on the setup.exe file.

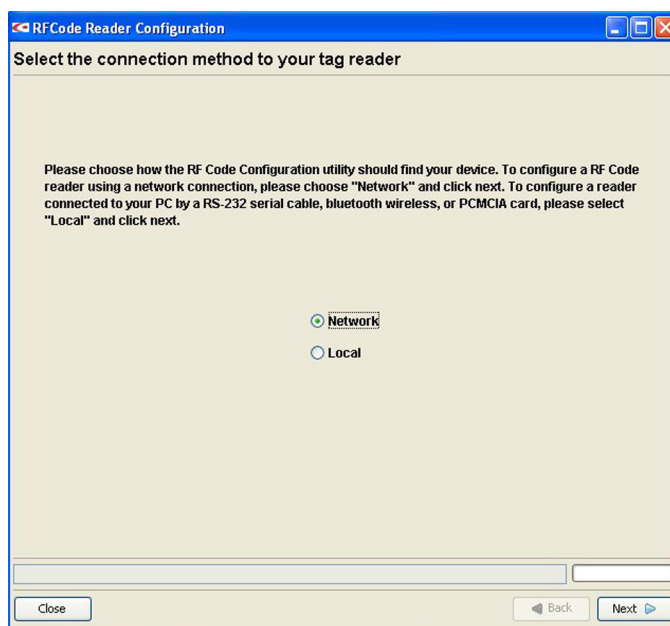
Launching Application

After installing the application from the CD, select **Start > All Programs > RF Code > Reader Configuration Utility > RF Code Reader Configuration Utility** to launch the application and display the main screen.

Main Screen

After launching the application, the main screen appears as shown in [Figure 1.1](#). You can select Network or Local and click Next to begin the setup. The network setup is used to configure a reader connected to a network by means of an ethernet connection. The local setup is used to configure a reader connected to your PC by a RS-232 serial cable, PCMCIA card, or USB cable.

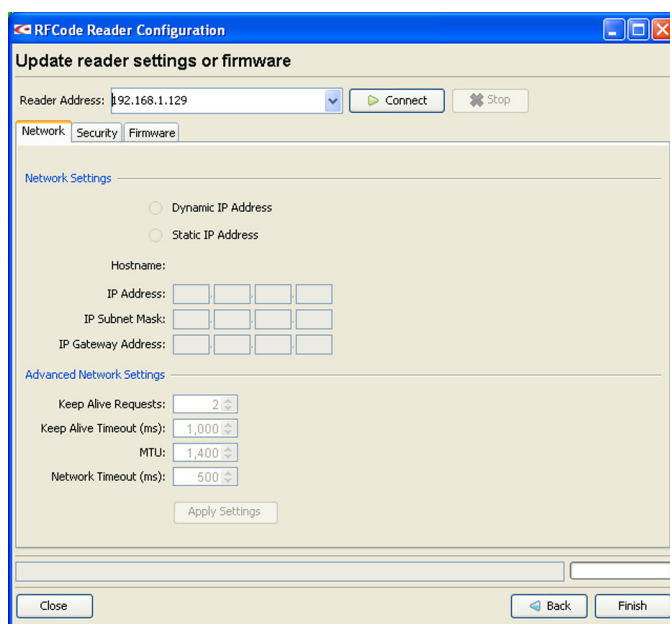
Figure 1.1 Main Screen



Network Connection

Select Network and click the Next button to display the setup screen as shown in [Figure 1.2](#)

Figure 1.2 Main Screen



Network Tab

At the top of the screen is a **Reader Address** field to enter the IP address of a reader. This field displays the factory default IP address (192.168.1.129) assigned to all readers. Choose the **Connect** button to connect to the reader. Network settings are grayed out during a connection attempt. If necessary, choose the **Stop** button to terminate a connection attempt if the reader can not be located or you want to enter another IP address.



In versions prior to V 2.3.4, to change the IP address of a reader, you may have to change your PC's IP address in order to talk to the reader. You must match the subnet of your PC and the reader. Then you can contact the reader and change its IP Address. Then change your PC's IP address back to what it was before.

The Network tab consists of two groups:

- Network Settings
- Advanced Network Settings

In the Network Settings group you can specify the following after connecting to a reader:

- IP Address – Initially indicates last address that was successfully connected.
- IP Subnet Mask – Enter your subnet mask. This is used with the network address to determine which part of the address is the network address and which part is the host address.
- IP Gateway Address – Enter gateway address used as an entry point into another network. For example: 166.70.10.1 could be used as a gateway. It is common for .1 and .2 to be setup as a network's gateway. The gateway is commonly the address of a network device such as a network router.

In the Advanced Network Settings group you can specify the following:

- Keep Alive Requests – Enter number of requests for a connection to be reused. Persistent connections reduce lag, because the client does not need to re-negotiate the TCP connection after the first request has been sent.
- Keep Alive Timeout (ms) – Enter how long keep-alive connections are kept alive.
- MTU – Maximum Transmission Unit (MTU) refers to the size (in bytes) of the largest packet that a given layer of a communications protocol can pass onwards. The MTU may be fixed by standards (as with Ethernet) or decided at connect time (usually the case with point-to-point serial links). A higher MTU brings higher bandwidth efficiency. However large packets can block a slow interface for some time, increasing the lag on other packets.
- Network Timeout (ms) – Refers to the time allowed before a network connection attempt is terminated.

Click the **Apply Settings** button after defining the desired settings.

In the Network tab, click the **Finish** button to close the application.

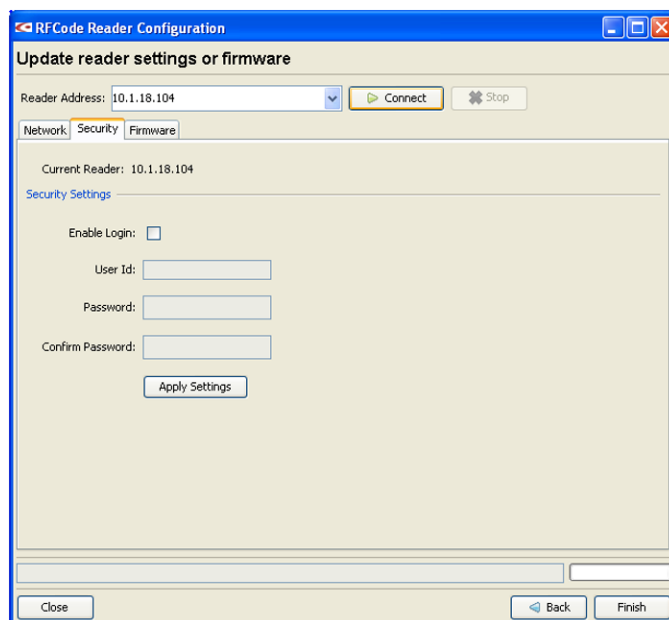
Security Tab

The Security tab allows you to grant or restrict access to the mobile reader through the use of a username, password, or both. The security feature is only functional for version 2.3.4 or later.

To use the Security tab to grant access to a new user, perform the following steps:

Click on the Security tab so that the security options are displayed.

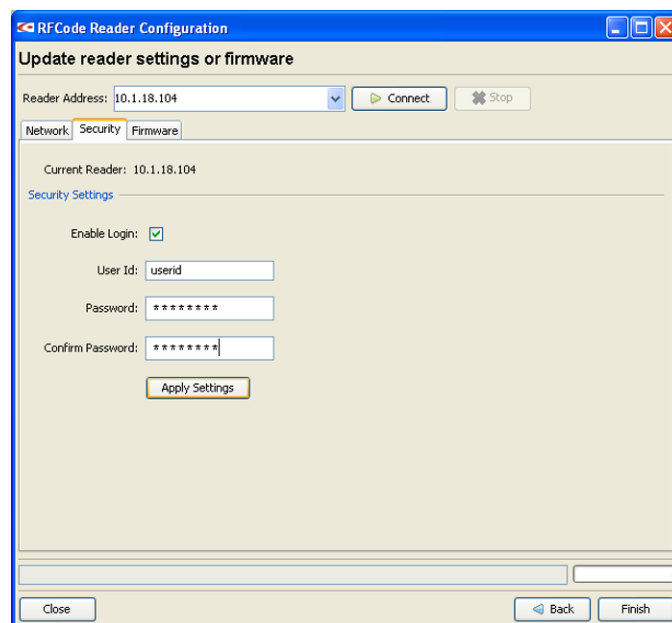
Figure 1.3 Security Settings



The screenshot shows the 'RFCode Reader Configuration' window with the 'Security' tab selected. The 'Update reader settings or firmware' section at the top includes a 'Reader Address' dropdown set to '10.1.18.104', a 'Connect' button, and a 'Stop' button. Below this, the 'Current Reader' is listed as '10.1.18.104'. The 'Security Settings' section contains an 'Enable Login' checkbox (unchecked), 'User Id', 'Password', and 'Confirm Password' text input fields, and an 'Apply Settings' button. At the bottom of the window are 'Close', 'Back', and 'Finish' buttons.

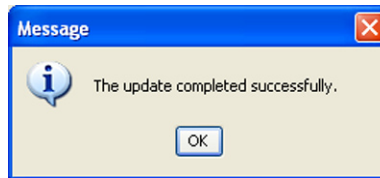
Check the Enable Login box and enter the username and/or the password that you wish to grant access to. Click **Apply Settings**.

Figure 1.4 Enable Password



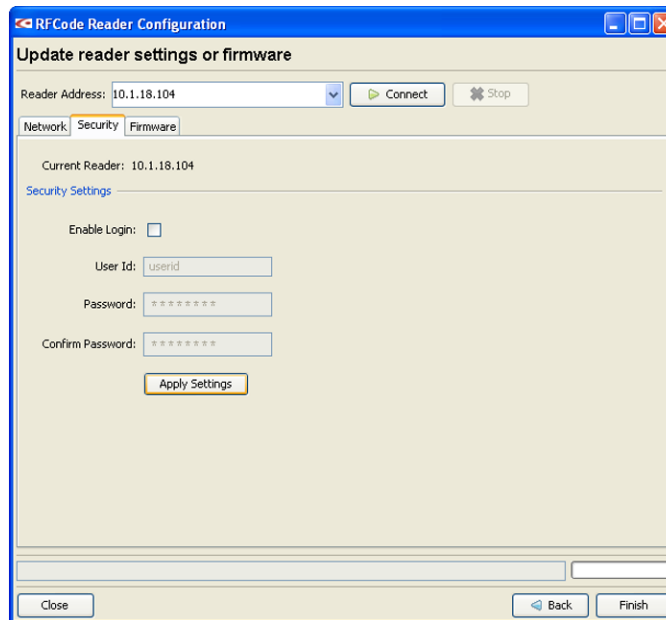
This screenshot is similar to Figure 1.3 but with the 'Enable Login' checkbox checked. The 'User Id' field now contains the text 'userid', and both the 'Password' and 'Confirm Password' fields are filled with eight asterisks ('*****'). The 'Apply Settings' button remains highlighted. The rest of the interface, including the 'Reader Address' and navigation buttons, is identical to the previous figure.

Once you have added the user, a completion dialog will appear to indicate that you have successfully given the user access. Click **OK** to continue.



To use the Security tab to remove access of a user uncheck the enable dialog box and click **Apply Settings**.

Figure 1.5 Disable Password



Once you have removed the user, a completion dialog will appear to indicate that you have successfully removed the user's access. Click **OK** to continue.

Firmware Tab Options

The Firmware tab consists of the following options as shown in [Figure 1.6](#).

- Current Firmware - Displays firmware version currently installed on reader.
- Firmware Build - Displays firmware build for version 2.3.4 or later.
- Available Firmware Images - Drop down list of available firmware images that can be uploaded to a reader.



Note

Readers can not downgrade to previous versions of firmware. Readers can use existing firmware or greater.



If you are upgrading the reader from a laptop, it is recommended to use the laptop's AC adapter instead of laptop batteries.

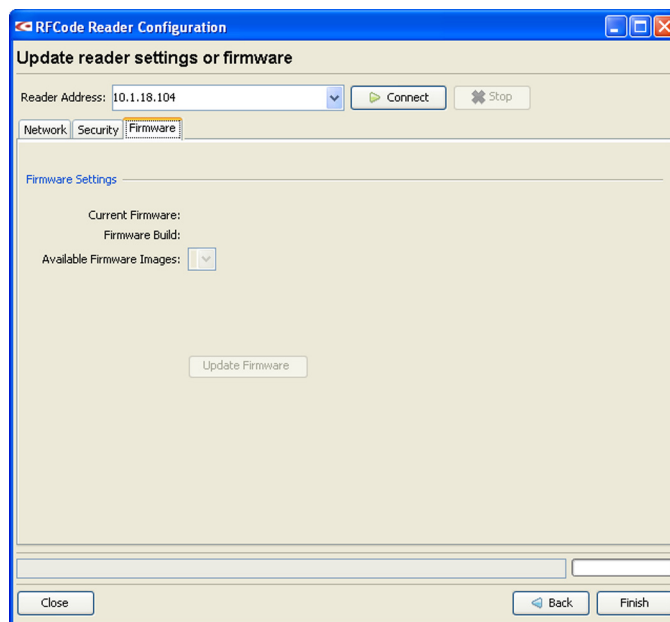


Note

The M220 Mobile Reader should be upgraded via the USB connection rather than the Bluetooth connection because it is a more reliable connection.

Select a firmware image from the dropdown list and click the Update Firmware button to begin the firmware upgrade process.

Figure 1.6 Firmware Options

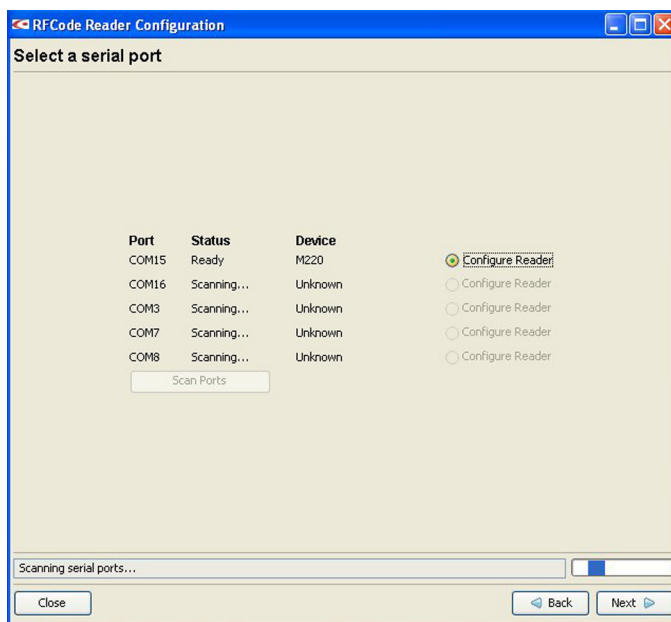


Local Connection

Use the Local Connection settings to configure a reader connected to your PC by a RS-232 serial cable or PCMCIA card.

On the main screen (Figure 1.1 on page 5) select local then click Next to begin a search of defined com ports.

Figure 1.7 Select Serial Port

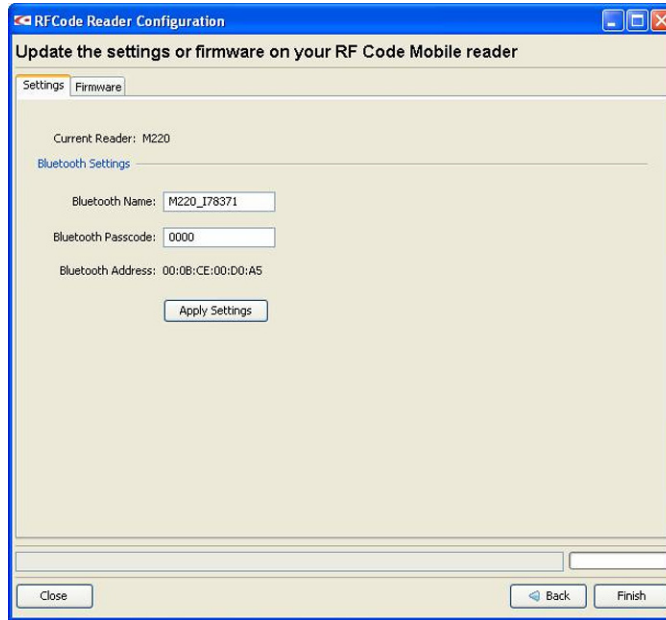


If necessary, choose the **Scan Ports** button to rescan ports for connected readers. Select the Configure Reader radio button next to the reader you wish to upgrade and click **Next**.

Bluetooth Passcode

After you have connected to your reader locally, there is an option to set a *Bluetooth* passcode for your reader. **This feature only applies to the M220 Mobile Reader. It does not apply to fixed readers.** To do this click on the Settings tab and enter the passcode you wish your device to have (the default is 0000). Click Apply Settings to implement the new passcode for the reader as shown in [Figure 1.5](#) below.

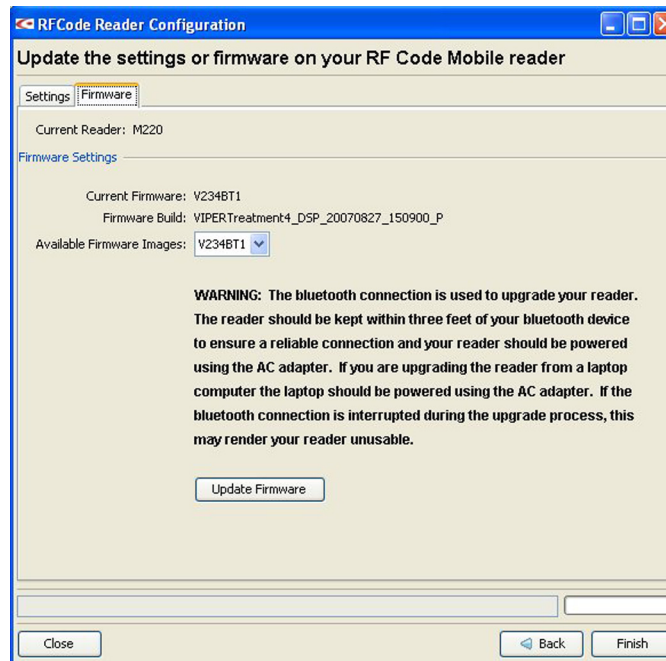
Figure 1.8 *Bluetooth* Passcode Settings



Firmware Tab

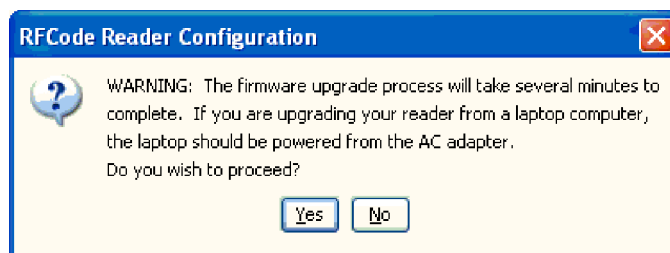
The firmware tab ([Figure 1.9](#)) indicates the current firmware installed on the reader and provides a list of available firmware images that can be uploaded to the reader.

Figure 1.9 Firmware Settings

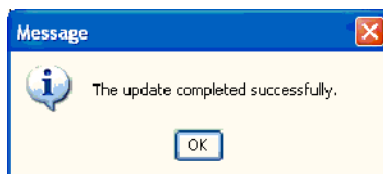


Select an available image from the dropdown list and click **Update Firmware** to begin the upgrade process.

A warning dialog will appear. Click **Yes** to proceed with the upgrade process.



After the process is complete the reader will be rebooted and a completion dialog will appear. Click **OK** and the configuration utility will attempt to reconnect to the reader.



Before performing an upgrade process you can click **Finish** to cancel the process and close the application. After an upgrade process is complete, click **Finish** to close the configuration utility.



Firmware upgrades will take longer when uploading to a mobile PC Card reader.



Do not reboot the reader while the firmware image is uploading to the reader. This will corrupt the firmware image.

Limited Standard Warranty Terms

RF Code warrants its products to be free from defects in materials and workmanship for a period of 1 year (12 months) for hardware and software from the date of purchase from RF Code. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser (end-user) and is not transferable.

Standard Warranty Limitations

Except as provided herein, the entire liability of RF Code and its suppliers under this limited warranty will be that RF Code will use reasonable efforts to repair or replace, without charge, all defective Products returned to RF Code by Customer, all as more particularly described in the End User Warranty. Except for the express warranties STATED HEREIN, RF Code makes no other representations or warranties and RF Code hereby disclaims, all other warranties, express, implied, statutory, or otherwise, including without limitation, any warranty of merchantability, non-infringement of third party intellectual property rights, fitness for a particular purpose, performance, satisfactory quality, or arising from a course of dealing, usage or trade practice.

Obtaining Service & Support

For in-warranty service, customers have several options. Customers having difficulty with RF Code products should attempt to solve those problems through RF Code's Technical Support Problem Escalation Process:

First, contact the RF Code representative or other distributor from whom the RF Code product was purchased for information on how to obtain local support.

Second, contact the RF Code Customer Support via e-mail.

Third, contact the RF Code Customer Support via the Support Line.

For product returns, the support engineer will give you a return material authorization (RMA) number. No returns will be accepted without an RMA number. If the warranty expired, there is a charge for repair or replacement per RF Code's out-of-warranty policy. For full details of the RF Code RMA policy, please review the "RF Code Warranty, RMA, and Extended Warranty Policy" document.

RF Code Customer Support

RF Code Customer Support gives entitled customers and partners the ability to contact RF Code about installation and usage-related questions as well as make defect inquiries about eligible products that are covered under RF Code warranty agreements. A team of technical specialists can be contacted electronically or via phone.

The Support Line is available to provide General Support during normal business hours: Monday through Friday, 8:00am to 5:00pm Central time, excluding national holidays.

E-mail: support@rfcode.com

Support form: <http://www.rfcode.com>

Voice: 512.439.2244 or toll-free at 866.830.4578